

of the castor-oil plant, the banyan tree, bamboo, various grasses, sirish, pulses, pipul, oleandar, and many others, burnt with a fire made of cowdung *chapatties*; but none of the substances tested acted as pulicides, nor did any of these substances burnt with *nim* leaves, give as good a result as *nim* leaves alone.

I have also endeavoured by various experiments to improve the method of fumigation by *nim* leaves, but failed. I am not satisfied that *nim* leaf fumigation will kill all the fleas on every rat, a few fleas do occasionally survive at times. This may be due to imperfections in the method of carrying out the experiments, either the muslin had been wrapped too much around the trap, and so protected the rat to some extent from the fumes, or the fire had gone out too soon, or the fleas at times may be better able to obtain protection in the fur of some rats, than in that of others. It seems more than likely, however, that fleas that had dropped off the bodies of dead plague rats (*viz.*, real plague fleas or plague-infected fleas), would be killed with greater ease in exposed positions on floors, and on walls, than they are when buried in the furry coat of the rat."

CAPTAIN L. COOK, F.R.C.S., I.M.S., has a long report on plague in Bihar, Saran and Champaran Districts, from which we make the following extracts :—

The report is somewhat diffuse and badly wants a summary, so it is not easy to make satisfactory extracts from it :—

"But the infection must have been carried by human beings fleeing from the infected places in the south of the district and also probably by cases from the adjoining districts of Ballia and Gorakhpur.

By no stretch of the imagination can it be put forward as a theory that this rapid spread throughout the district was due to the migration of rats, otherwise the occurrences of rats fleeing from village to village must have been very common and witnessed by many people, but I have never been able to obtain any authentic evidence of these migrations ever having been witnessed.

In addition, the *Mus Rattus* has so many natural enemies directly it leaves the refuge of the thick mud-walled villages or the crowded houses in towns that it is not likely to court certain disaster by going on long hazardous journeys across fields.

As to whether the infection can be carried by grain is a moot point, but if it is, it is a small factor in the spread of the disease. Plague is at its worst in the Saran district during the months of January, February and March, whereas the traffic in grain, both imported and exported, takes place chiefly in the months of April, May and June when plague is subsiding. The imports of grain into Saran chiefly come from Darbhanga, Muzaffarpur and Bhagalpur districts, less affected than Saran itself."

Rats infest thick mud-walled huts which are admirably adapted for their burrows, hence Capt. Cook writes :—

"The lesson to be learned therefore from the above facts and figures is that the building of mud huts or *kutch-pucka* buildings constitutes a grave danger to a community, by reason that they afford a suitable harbourage for rats, and, given time, the latter will accumulate to such numbers that once plague commences amongst them as an epizootic, the outbreak of plague amongst humans will be a result.

That the erection of these mud huts in villages can be prevented is at present impossible, but in municipalities where one presumes building regulations are in force, it should be made a criminal offence to erect a mud hut, and if the people who propose to erect a house cannot afford to build a *pucka* house, they should be compelled to erect only a wattle hut and *leap* this with a thin layer of mud to prevent fire.

Yet the building of these mud huts continues day by day in municipalities and this with the cognizance of the Municipal authorities who are powerless to prevent it. And these huts are built one on the top of the other so that the congestion of the population becomes extreme, and if nature steps in eventually and thins out the population by a merciless plague epidemic, no one can be very much surprised.

In these days lakhs of rupees are spent on the construction of *pucka* drains in large municipalities and another aspect of this sanitary question is whether it would not be better to utilise some of this money in acquiring houses in congested parts, razing them to the ground and so gradually open up the town; at the same time suitable building regulations should be made and means taken to enforce them."

The last report is one of cholera at Puri at and after the Car Festival of July 1912. It is by Dr. N. Hay Pulipaka, the Civil Surgeon, and shows very clearly and in an instructive way the great danger from the diffusion of cholera by returning pilgrims, carriers and contact cases.

## Correspondence.

### THE BOMBAY PLAGUE LABORATORY. A CORRECTION.

To the Editor of "THE INDIAN MEDICAL GAZETTE."

SIR,—In the article published in your issue of this month on "The Bombay Tropical School Scheme" there occurs the following passage referring to the Bombay Laboratory :

"For a long time this institution was more than busy with the manufacture of anti-plague vaccine or Haffkine's prophylactic. In 1901 further advance was proposed—a Central Research Laboratory—but the unfortunate Mulkowal disaster (to which we need not further refer) had a necessary depressing effect and the Institute was kept busy by administrative changes, and improvement in methods so as to render the recurrence of such a tragedy as the Mulkowal case an impossibility."

These lines suggest that the Mulkowal accident had its origin in the institution in question.

Will you allow me to mention, as, I think, I have done once on a former occasion, that at first it was indeed believed that the matter stood as suggested in the above passage. When, however, the materials of the investigation were published, the professors of pathology and bacteriology at the Universities of Cambridge, Edinburgh, Manchester, Leeds, Liverpool, King's College, St. Bartholomew's Hospital Medical School, the Royal Institute of Public Health, in London; and the Rockefeller Institute of Medical Research in New York (*viz.*, Professors G. Sims Woodhead, Ch. Hunter Stewart, Sheridan Delépine, R. F. C. Leith, Sir Ronald Ross, A. F. C. Tanner Hewlett, W. J. R. Simpson, E. Klein, W. R. Smith and Simon Flexner), submitted to the Secretary of State for India and published a joint statement to the effect that the case did not offer ground for the above conclusion, and that the facts disclosed at the enquiry and in the subsequent laboratory experiments indicated that the origin of the accident had not been connected with the operations at the Laboratory. (*Vide The Times* of 29th July and 29th August, 1907.)

United Service Club,

Calcutta, 22nd May, 1914.

Yours faithfully,

W. M. HAFFKINE.

[We are very glad to publish Dr. Haffkine's letter. The brief summary given above might mislead those unacquainted with the whole case, therefore the importance of the last para. of Dr. Haffkine's letter above.—ED., I.M.G.]

### VACCINATION AND RE-VACCINATION.

To the Editor of "THE INDIAN MEDICAL GAZETTE."

SIR,—The following is a copy of a letter addressed by me to the Superintendent of Vaccination, Darjeeling.

With reference to your letter No. 1705, dated 26th March 1913, asking me to explain the reason of high percentage of successes in re-vaccinations, I beg most respectfully to submit the following :—

There had been a fearful outbreak of small-pox in this town during the year 1900 and 1901, and I was entrusted with



the vaccination work of the town. Since then I am doing so, besides being in charge of the Small-Pox Hospital where about 14,165 primary and 37,195 re-vaccinations were performed under me, and I had an opportunity of closely observing the vaccination and its effect to prevent small-pox, and I have come to the following conclusions and confirmed it by making an extra column in the vaccination register for entering the time of previous vaccination, inoculation or having had small-pox, as the enclosed statement will show.

From the past experience it has been found, and it has also been proved, that the protective power of successful vaccination in 6 points lasts for 5 years as a general rule. But, if it is in one or two points the protective power lasts only for one or two years and the power of Nepal inoculation lasts about 10 years, whereas protection from natural small-pox lasts for 20 to 30 years or more. Thus it will be seen that if anybody is vaccinated in one point, or out of 6 points vaccination only one point is successful, and after that re-vaccinated again one or two years later in 6 points with good lymph, the result will be successful in 6 points, but, on the other hand, if anyone is successfully vaccinated in 6 points and re-vaccinated again one or two years after, it will never be successful, unless the man is specially susceptible of getting small-pox, which is very rare; but, on the other hand, if he is re-vaccinated 6 or 7 years later, the result will be successful as a general rule (but there may be some exceptional cases), *vide* column of enclosed statement marked A in red ink. Thus re-vaccination on Nepal inoculation cases after 10 or 12 years show successful result.

We generally re-vaccinate 5 years after the previous vaccination and therefore the result is successful in high percentage, and if circumstances compel us to re-vaccinate within five years the result is unsuccessful unless previous vaccination had been in one or two points only, in which case the result will be contrary.

If in a month only two re-vaccinations were performed 6 or 7 years after the primary vaccination in 6 points, or two years after, in one or two points primary vaccination, the result will be successful, that is 100%, *vide* column of enclosed statement marked C in red ink, but in average for 9 months' work it will not be so high and, in fact, as our current year's work show, that it has come to 62%, *vide* figures of enclosed statement marked D. Again, if statistics are taken from the figures for the period of outbreak of small-pox when re-vaccination was performed from one side to another without consideration of time of previous vaccination, the figure or percentage of re-vaccination will depend on the nature of the previous protection of the localities. If these points are carefully observed it will be seen that there is nothing unusual or extraordinary in the current returns of the town vaccination.

There are some exceptional cases where this general rule is not applicable. I saw a woman who had an attack of small-pox during the outbreak of 1901 and was treated in the Temporary Small-Pox Hospital at Laundry and was cured. But the very woman had another attack of small-pox during the outbreak of 1906 and died in the Small-Pox Hospital, Darjeeling.

Another fact I beg to bring to your kind notice is that the outbreak of small-pox in Darjeeling town took place 5 years after, *i.e.*, 1901 and 1906, because we never vaccinated anybody in less than 6 points unless a very small baby, as provided in the Circular No. 28, dated 25th March 1905, a copy of which is enclosed herewith, *vide* annexure E. The reason of having no outbreak in 1912 is that we knew the fact and were careful, whereas in Calcutta people are generally vaccinated in one or two points. I presume this is probably the cause of outbreak of small-pox in Calcutta almost in every 2 or 3 years.

I have the honour to be,  
etc.,

(Sd.) NIBARAN CHANDRA SEN,  
RAI BAHADUR,

Medical Officer-in-Charge, Town Vaccination, Darjeeling.

#### SUB-CONJUNCTIVAL ECCHYMOSIS DUE TO WHOOPIING COUGH.

To the Editor of "THE INDIAN MEDICAL GAZETTE."

SIR,—Would you kindly find a little space in your journal to publish the following case of severe sub conjunctival ecchymosis is due to "Whooping Cough." It may interest some of your readers at least, as this complication does not often arise.

The other day while I was sitting in my dispensary, a girl, aged about 5 years, was brought to me for treatment of her eyes, which were terribly red and swelled up, as if shooting out from the eye pit, the eyelids were dark blue she complained of no pain and discomfort. Many eye drops were tried by the quacks and other private practitioners,

but obviously to no effect. History from her mother states that she had been suffering only from a peculiar fit of cough—generally during night and early hours of the morning, with but little expectoration occasionally tinged with blood. But since last 3 days her eyes began to be red and was increasing till reached the present stage. On auscultation, only a few stray rhonchi were found here and there, otherwise her chest and all other organs are perfectly sound. She sometimes gets a little high temperature during night. She had a fit of coughing before me and evidently it was "Whooping Cough." On further enquiry it was made out that there are many children of the same village, suffering from the identical fit of cough, but without any complication, out of which 4 died.

As it is an outdoor dispensary I compelled them to live somewhere near the dispensary for my observation. On the 8th day, her cough nearly gone and the ecchymosis nearly disappeared and she was perfectly cured on the 12th day. She is now a jolly little girl as before. I send a brief detail of my method of treatment:—

Internally—Belladonna and bromides.

Externally—Protargol, cocaine and boric acid lotion.

The eyes protected by eye-preserver.

I had to stop belladonna after two days, as the pupils were much dilated. During my small service of 8 years I have never come across a case of Whooping Cough with such sever complication.

DATED SHELLA,

Khasi Hills.

Yours, etc.,

J. C. MITER,

S. A. Surgeon.

#### LIVE FISH ACTING AS A FOREIGN BODY IN THE THROAT.

To the Editor of "THE INDIAN MEDICAL GAZETTE."

DEAR SIR,—I shall be very much obliged if you will kindly publish the following in the *Indian Medical Gazette*:—

A Madras cooly boy, aged 14, was brought into the hospital on 28th January 1914 from a village about 3 miles from Pypoon with a history that a live mud fish (Climbing Perch?) accidentally got into and was lodged inside the throat. It happened that the boy went out fishing, caught several of these live fish which he put into a small earthen pot. To prevent these from jumping out of it, he caught hold of one of them and tried to grind it to death between his teeth. No sooner he opened his mouth, the fish in his hand escaped, dashed forwards and lodged itself inside the throat with his head downwards, there being no chance of its coming out on account of the spikes piercing the throat wall. The patient arrived at the hospital about 4 hours after the accident, with a very anxious look and in great agony and pain. There was a flow of saliva mixed with blood trickling down from the mouth. On examination into the throat, it was found that the tail of the fish about an inch in length was the only part visible—the head and body being well down in the upper end of the oesophagus.

The throat having been sprayed with local anaesthesia, a pair of tongue forceps was applied to the tail as much as they could possibly catch. Having introduced my forefinger into it, I cut away few spikes with a pair of curved scissors guided by the finger, but not sufficiently to relieve the fish entirely. A gentle thrust of my finger as well as that of my assistant on either side, well close upon the spikes, however, entirely relieved the entanglement, so that the traction through the forceps presented no difficulty and the dead fish was removed *in situ*. There was slight laceration for which Pot. Permang. Solution was given to gargle, and the patient discharged from the hospital on the 4th February, completely relieved.

Nature of fish.—It was mud fish of *Anabas Scandens* (?)—commonly called among the Burmese "Ngabyema." English name—Climbing Perch; Bengali and Hindustani name—Kol; Madras name—Penair Kandai.

It was 4½ inches long, 1½ inches broad and measured 4½ inches in circumference at its thickest part of the body. The remarkable feature of this kind of fish is the presence of long and prominent spikes on both its dorsal and ventral sides.

Although accidents of this kind are extremely rare and unusual, I have been informed that a similar case was brought into a neighbouring hospital in 1904, where the patient unfortunately succumbed as the fish could not successfully be extracted.

Yours, etc.,

SHWE GE,

Offg. Civil Surgeon, Pypoon, Burma